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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JIM OTTER

Appeal 2009-004602
Application 09/738,591
Technology Center 1700

Decided: September 2, 2009

Before TERRY J. OWENS, CATHERINE Q. TIMM, and
JEFFREY T. SMITH, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge.*

DECISION ON APPEAL

I. STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1-3, 5, 7, 22, 26, 33-35, 37-39, and 42.[1] We have jurisdiction under 35 U.S.C. § 6(b).

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[1] Claims 27 and 40 stand allowed. Appellant did not appeal the rejection of claims 25, 29-32, and 36 (Br. 2), and the Examiner canceled these claims by

We AFFIRM.

The invention generally relates to a method of making a film with increased higher surface energy and wettability (Spec. 1). Claim 1 is illustrative:

1. A method for making a film for use with a heat transfer component comprising the steps of:

applying a plurality of polar particulates to a surface of a heated film;

then embedding the plurality of polar particulates into the surface of the heated film with a first roller;

regulating a temperature of the first roller to resist cooling of the film; and

then adding the film to the heat transfer component.

The Examiner maintains, and Appellant appeals, the following rejections:

A. The rejection of claim 1 under 35 U.S.C. § 112, ¶ 1, as failing to comply with the written description requirement;

B. The rejection of claims 1-3, 5, 22, 26, 33-35, 37-39, and 42 under 35 U.S.C. § 103(a) as unpatentable over Bentley (US 4,848,314, issued Jul. 18, 1989) in view of Kaneko (US 4,421,789, issued Dec. 20, 1983) and further in view of Barclay (US 2,899,288, issued Aug. 11, 1959) in combination, and further in view of Walling (US 5,728,424, issued Mar. 17, 1998) and Takagi (US 3,450,585, issued Jun. 17, 1969); and

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Examiner's Amendment (Communication of Jan. 2, 2009). Claims 4, 6, 8-21, 23, 24, 28, and 41 had been previously canceled (*see* Br. 2).

C. The rejection of claim 7 under 35 U.S.C. § 103(a) as unpatentable over the above references further in view of Linford (US 6,132,801, Oct. 17, 2000).

II. WRITTEN DESCRIPTIVE SUPPORT

Issue

The Examiner rejects claim 1 as failing to comply with the written description requirement of 35 U.S.C. § 112, ¶ 1 because "[t]he limitation of having the first roller 'resist cooling of the film' can only reasonably be interpreted to mean that cooling is prevented and heating of the film is maintained." (Ans. 3.) This lacks support, according to the Examiner, because the Specification at page 4, lines 19-20 requires at least some cooling, albeit at a specific rate, whereas the claim requires resisting/preventing cooling (Ans. 3-4).

Appellant contends that the Examiner is interpreting "resist cooling" too narrowly (Br. 3). According to Appellant, the Specification at page 4, lines 19-20, supports a broader use of the term to encompass a degree of cooling.

The issue is: Has Appellant established that the Examiner reversibly erred in finding a lack of written descriptive support for "resist cooling" based upon an overly narrow interpretation of the claim language?

We answer that question in the affirmative.

Findings of Fact

Claim 1 requires a step of "regulating a temperature of the first roller to resist cooling of the film."

Page 4, lines 19-20 of the Specification state that "[t]he temperature of the first smaller roller 24 is controlled to prevent the film 12 from cooling too fast."

The Examiner provides no supporting evidence that the meaning of "resist" in the context of the claim is limited to "preventing."

Principles of Law

"During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow." *In re Zletz*, 893 F.2d 319, 321-22 (Fed. Cir. 1989).

"The test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, rather than the presence or absence of literal support in the specification for the claim language." *In re Kaslow*, 707 F.2d 1366, 1375 (Fed. Cir. 1983).

Analysis

We agree with Appellant that the Examiner has unreasonably confined the meaning of "resist cooling." The Examiner has provided no supporting evidence indicating that those of ordinary skill in the art would have interpreted "resist cooling" as limited to only "preventing cooling." On the other hand, the portion of the Specification cited by Appellant reasonably conveys the concept of at least preventing some cooling by controlling the temperature of the roller "to prevent the film 12 from cooling too fast." Therefore, the Examiner has not provided the necessary level of evidence in support of a finding that Appellant's Specification does not

reasonably convey possession to one of ordinary skill in the art of the concept of resisting cooling.

Conclusion

Appellant has established that the Examiner reversibly erred in finding a lack of written descriptive support for "resist cooling" as recited in claim 1.

III. OBVIOUSNESS

A. Rejection of claims 1-3, 5, 22, 26, 33-35, 37-39, and 42 under 35 U.S.C. § 103(a)

With regard to the rejection of claims 1-3, 5, 22, 26, 33-35, 37-39, and 42 under 35 U.S.C. § 103(a) over Bentley, Kaneko, Barclay, Walling, and Takagi, Appellants first argue the claims as a group and then add further arguments for claim 42 (Br. 4-5). We, therefore, select claim 1 as representative for the first argument and treat claim 42 separately in accordance with 37 C.F.R. 41. 37(c)(1)(vii).

1. Claim 1

Issue

With regard to the claims as a group, Appellant contends that there is no motivation to combine Walling and Takagi (Br. 4).

The issue is: Has Appellant established that the Examiner reversibly erred in concluding that the subject matter of claim 1 would have been obvious?

Findings of Fact

The Examiner relies upon Walling as evidence that it was known to use rollers to embed particles into a film and to further serve as a postheater to cause bonding of the particles to the film (Ans. 6).

The Examiner relies upon Takagi for its teaching of heating a top roller while cooling the bottom roller to control melting of a sheet of film even though the top surface of the sheet may experience high heat from the upper roller, "per claim 42." (Ans. 6.)

Claim 1 does not require a cooled bottom roller.

Principles of Law

The appellant has the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006). When the Patent Office's position is based on logic and sound scientific principle, an appellant must specifically point out why the Patent Office's position is unsound. *In re Soli*, 317 F.2d 941, 945-46 (CCPA 1963).

Analysis

Appellant does not dispute that Walling, as found by the Examiner, describes a first roller that regulates temperature as required by claim 1 (Br. 4; Reply Br. 1-2). This finding of the Examiner is supported by the portion of Walling cited by the Examiner, i.e., column 4, line 63 to column 5, line 60 (Ans. 5-6). Nor does Appellant dispute the Examiner's combination of Walling's teachings with those of Bentley, Kaneko, and Barclay (Br. 4; Reply Br. 1-2). The Examiner presents a reasonable rationale for the combination (Ans. 5-6).

The teachings of Takagi are not required to meet the requirements of claim 1. Therefore, a reason or motivation to combine the teachings of Walling with Takagi is further not required for this claim. Appellant has not specifically pointed out why the Examiner's position is unsound with respect to the rejection of claim 1.

Conclusion

Appellant has not established that the Examiner reversibly erred in concluding that the subject matter of claim 1 would have been obvious to one of ordinary skill in the art.

2. Claim 42

Issue

With respect to claim 42, Appellant again argues that there is no motivation to combine Walling and Takagi (Br. 4-5; Reply Br. 2-3).

The issue is: Has Appellant established that the Examiner reversibly erred in finding a reason to cool the lower roller of Walling while heating the upper roller in order to embed the particles and bond the particles to a film as required by claim 42?

Findings of Fact

Walling describes a process for texturizing the surface of a polymeric geomembrane by applying particles or projections onto the geomembrane surface (Walling, col. 1, ll. 5-11). Texturizing is accomplished by heating an upper surface of the geomembrane, distributing granules onto the heated surface, and bonding the granules onto the heated surface (Walling, col. 2, l. 66 to col. 3, l. 6). The portion of Walling's Figure 1 showing the apparatus of interest is reproduced below:

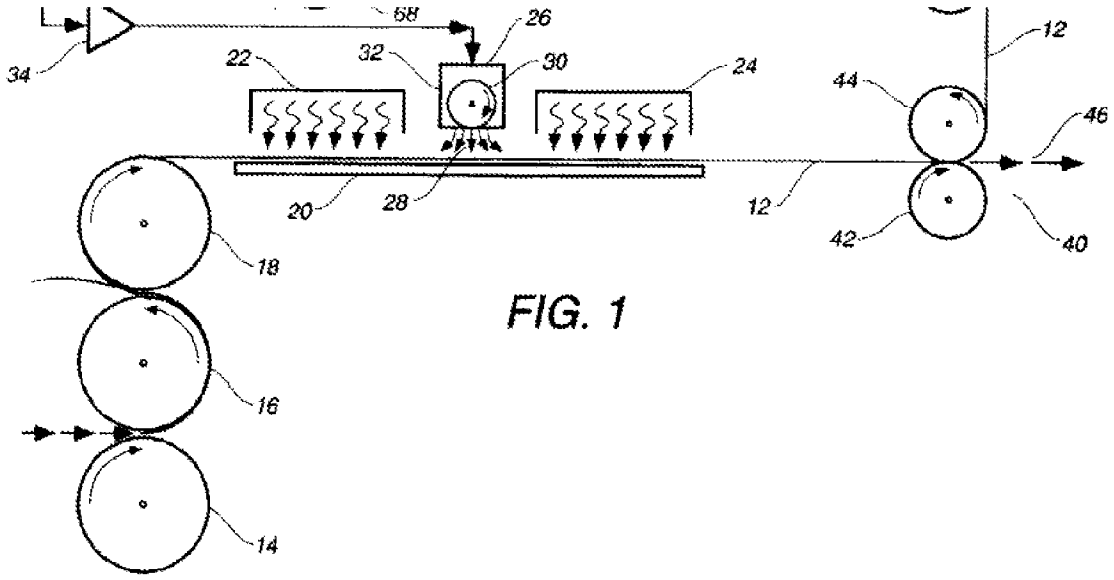

FIG. 1

Lower portion of Fig. 1 of Walling

As shown in Figure 1 of Walling, the geomembrane enters rollers 14 and 16, passes around roll 18, under preheater 22, past distributor 26, which deposits granules onto the surface, under postheater 24, and through rollers 42 and 44 (Walling, Fig. 1; col. 4, ll. 23-41 and col. 5, ll. 40-43). Rollers 14, 16, and 18 may be heated or cooled to help establish the necessary sheet temperature (Walling, col. 4, ll. 31-33). The preheater 22 serves to elevate the temperature of the membrane, if such heating is necessary (Walling, col. 4, ll. 55-62). The postheater 24 provides or maintains the time/temperature necessary for bonding of the granules to the membrane (Walling, col. 4, ll. 63-67). The rollers 42 and 44 serve to "press the granules more tightly onto the membrane surface" (Walling, col. 5, ll. 47-50).

Walling discloses that the rollers 42 and 44 "can serve the purposes of the postheater 24 so as to effectively carry out the bonding of the particles to the membrane." (Walling, col. 5, ll. 57-61).

The Examiner finds, and Appellant does not dispute, that Walling "teaches the concept of heating a polymer substrate prior to, or after application of particles by heated rollers 42, 44, to cause partial embedding and bonding of the particles to the polymer film." (Ans. 8; Br. 4-4-5; Reply Br. 1-3).

Takagi teaches passing a sheet through a heated upper roller 1' and a cooled lower roller 1 (*see*, e.g., Takagi, Fig. 3). The heated upper roller 1' melts powdered resin S sprinkled onto the surface of the sheet and deforms the melted particles into projections (Takagi, col. 3, ll. 9-23 and Fig. 3). The cooled lower roller 1 prevents upper roller 1' from melting the sheet material and accelerates solidification of the projections (Takagi, col. 3, ll. 36-45).

The Examiner concludes that

> the substitution of the hot lower roller 42 of Walling with a cold roller 1 as disclosed by Takagi would have been an obvious modification to provide the recognized advantage of the avoidance of detrimental melting of the substrate while the top surface containing particles remains hot for further processing. See Takagi col. 3, 36-45.

(Ans. 8.)

Principles of Law

"The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007). Under the flexible inquiry set forth by the Supreme Court, the examiner must take account of

the "interferences and creative steps," or even routine steps, that an ordinary artisan would employ. *Ball Aerosol And Specialty Container, Inc. v Limited Brands, Inc.*, 555 F.3d 984, 994 (Fed. Cir. 2009).

Analysis

The evidence supports the Examiner's finding of a suggestion within the prior art to cool the lower roller when passing a polymeric sheet between rollers and using a heated upper roller to heat the sheet in the embedding and bonding process of Walling. As found by the Examiner, cooling lower rollers was known to prevent undesired melting of the sheet passed through the rollers. While Takagi is directed to a process of melting resin particulate rather than embedding particulate into the heated upper surface of a sheet, this reference provides evidence that cooled lower rollers were known for preventing undesirable heating of a sheet contacted by a heated upper roller. Using a known cooled roller for its known function of cooling within the process of Walling follows from the teachings of the prior art. We note that Walling itself suggests using cooled rollers, as well as heated rollers, when preheating the sheet with rollers 14, 16, and 18. This provides additional support for the Examiner's finding of a suggestion within the prior art.

Conclusion

Appellant has not established that the Examiner reversibly erred in finding a reason to cool the lower roller of Walling while heating the upper roller in order to embed the particles and bond the particles to a film as required by claim 42.

B. Rejection of claim 7 under 35 U.S.C. § 103(a) further in view of Linford

Claim 7 further limits claim 1 and requires a step of "coating an outer surface of the plurality of polar particulates with a coating."

The Examiner finds that Linford teaches applying a coating on silica and other inorganic particles to allow "a more robust coating attachment in micro particle/polymer composite materials to prevent de-bonding of the particles." (Ans. 7.) The Examiner concludes that it would have been obvious to apply such a coating to the particles to more strongly attach the particles to the base (Ans. 7).

Appellant contends that there is no motivation to modify the particles of Kaneko with the coating of Linford for use in the heat exchanger of Bentley because the coating of Linford is hydrophobic and would destroy the wetting function of the particles (Br. 5). Appellant cites to column 3, lines 53-57 of Linford in support (Br. 5).

Issue

Has Appellant established that the Examiner reversibly erred in finding a reason to apply a coating as taught by Linford onto the particles of Kaneko?

Findings of Fact

Column 3, lines 53-57 of Linford describes coatings with "relatively hydrophobic unsubstituted alkyl chains" that are "particularly useful in applications such as reverse phase chromatography."

Linford teaches a wide variety of other polymers for coating the particles, some of which are hydrophilic (Linford, col. 4, ll. 60-67).

Linford does not particularly limit the use of the coated particles and discloses that they are conventionally used in a wide variety of applications and substances (Linford, col. 1, ll. 17-21). According to Linford, in articles

in which coated silicon particles are embedded in an organic material such as plastics, the coating acts as a coupling agent between the silicon and the organic material, reducing de-bonding (Linford, col. 5, ll. 1-11).

Appellant's Specification describes adding a surface treatment 30 (shown in Fig. 4) to particulate 16 "either to enhance adhesion of the particulate 16 to the polymer or to enhance wettability." (Spec. 6, ll. 4-6.) According to the Specification, "[a]ny surface treatment 30 can be utilized to enhance adhesion or wettability." (Spec. 6, ll. 6-7.) The Specification explains that the surface treatment used varies depending on the chemistry of the film (Spec. 6, ll. 8-9). The Specification does not provide specific guidance on how to select the treatment (Spec., generally).

Principles of Law

"[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007).

Analysis

Linford's teaching is more far reaching than acknowledged by Appellant. Linford describes a broad range of coating compositions, both hydrophobic and hydrophilic, for use on particles. The coating can be selected to enhance bonding between a silicon-based particle and a polymeric substrate. It appears from Linford, as well as from Appellant's own Specification, that selection of coatings able to enhance bonding without adversely impacting the desired properties of the particulate would have been within the capabilities of those of ordinary skill in the art.

Appellant does not provide any particular guidance on how to select the coating, and, therefore, we presume such selection was within the capabilities of those of ordinary skill in the art so as to enable how to make and use the disclosed coating embodiment.

Conclusion

Appellant has not established that the Examiner reversibly erred in finding a reason to apply a coating as taught by Linford onto the particles of Kaneko.

IV. CONCLUSION

We do not sustain the rejection of claim 1 under 35 U.S.C. § 112, ¶ 1, as failing to comply with the written description requirement

We sustain the following rejections of the Examiner:

The rejection of claims 1-3, 5, 22, 26, 33-35, 37-39, and 42 under 35 U.S.C. § 103(a) as unpatentable over Bentley in view of Kaneko and further in view of Barclay in combination, and further in view of Walling and Takagi; and

The rejection of claim 7 under 35 U.S.C. § 103(a) as unpatentable over the above references further in view of Linford.

V. DECISION

The decision of the Examiner is affirmed.

VI. TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(v).

AFFIRMED

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